

Work Order ID 57519

April 8, 2010 7:21:43 AM



Page 1

Item ID: D3492-043

Accept



Setup Start



Revision ID:

Stop



Item Name: Plug Assembly

Start Date: 4/08/10 Start Qty: 40.00

Cust Item ID:

Required Date: 4/16/10 Req'd Qty: 40.00

Customer:

Reference:

Ref 10.04.02.

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3492

Rev C

100

0.00



Hardinge CNC LATHE SMALL

Hardinge

Memo

0.00

Hardinge CNC Lathe Small

1-Turn as per Folio FA632 & Dwg D3492 □ Dwg Rev: C □ Folio

Rev: C

SA 10/04/11

40 0

110

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

SA 10/04/11

40 0

120

0.00



QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

SA 10/04/12

40 0

Work Order ID 57519



Page 2

April 8, 2010 7:21:43 AM

Item ID: D3492-043

Accept



Setup Start



Revision ID:

Stop



Item Name: Plug Assembly

Start Date: 4/08/10 Start Qty: 40.00

Cust Item ID:

Required Date: 4/16/10 Req'd Qty: 40.00

Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Chemical Conversion Coat per QSI005 4.1

0.00



BR 10-4-13

(40)

HandFinish

Memo

0.00

Hand Finishing

140

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



11114207

7 10/04/13

(140)

Powdercoat

Memo

0.00

Powder Coating

(Flat End Only) ☐ START TIME: 12:45pm ☐ OVEN
TEMPERATURE: 1.15pm ☐ FINISH TIME: 320°F

150

QC3- Inspect Part Finish

0.00



BR 10-4-13

(40)

QC

Memo

0.00

Quality Control

Work Order ID 57519

April 8, 2010 7:21:44 AM

Page 3

Item ID: D3492-043

Accept

Revision ID:

Item Name: Plug Assembly

Start Date: 4/08/10

Start Qty: 40.00

Required Date: 4/16/10

Req'd Qty: 40.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

Identify as per dwg & Stock Location: FP-13

0.00



Packaging

Memo

0.00

Packaging

170

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control



Setup

Start

Stop

Cust Item ID:

Customer:

Run

Start

Stop

10/04/14 *[Signature]*

ME

10-4-14

Picklist Print

April 8, 2010 7:21:42 AM

Page 1

Work Order ID: 57519



Parent Item: D3492-043



Parent Item Name: Plug Assembly

Start Date: 4/08/10

Required Date: 4/16/10

Comments:

IPP Rev: A 06.03.21 New Issue JLM

IPP Rev: B 06-08-28 As per Rev B JLM

IPP Rev: C 07-12-06 Rev C dwg DD verified by: EC

IPP Rev: D 08-05-07 add note to count qty DD verified by: JLM

Start Qty: 40.00

Required Qty: 40.00

M6061T6R0.750

Purchased

No

100

f

72.8800

2.6316



6061-T6 Round Bar .750"

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

MAT012

72.88

112041

30

112442

42.88

2.5 dt SA 10/04/11

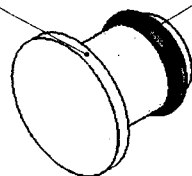
10 dt

Value stream mapping

- Value stream mapping is **the best way to identify where the high payoff** opportunities are, yet value stream mapping is the lean tool most likely to **not be used by** companies doing pretend lean!

D3492-XX PLUG
(SEE TABLE)

NAS1611 PLUG
(SEE TABLE)



w/o 57519

D3492-XXX PLUG PARTS LIST

QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	PART NUMBER	DESCRIPTION
X							D3492-041	PLUG ASSEMBLY
	X						D3492-043	PLUG ASSEMBLY
		X					D3492-045	PLUG ASSEMBLY
			X				D3492-047	PLUG ASSEMBLY
				X			D3492-049	PLUG ASSEMBLY
					X		D3492-051	PLUG ASSEMBLY
						X	D3492-053	PLUG ASSEMBLY
1							D3492-1	PLUG
	1						D3492-3	PLUG
		1					D3492-5	PLUG
			1				D3492-7	PLUG
				1			D3492-9	PLUG
					1		D3492-11	PLUG
						1	D3492-13	PLUG
		1					NAS1611-005	O-RING
			1				NAS1611-007	O-RING
1							NAS1611-010	O-RING
						1	NAS1611-012	O-RING
	1						NAS1611-013	O-RING
					1		NAS1611-015	O-RING
				1			NAS1611-016	O-RING

△ △ △

NOTES:

1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX







UNDER REVIEW

02.04.11

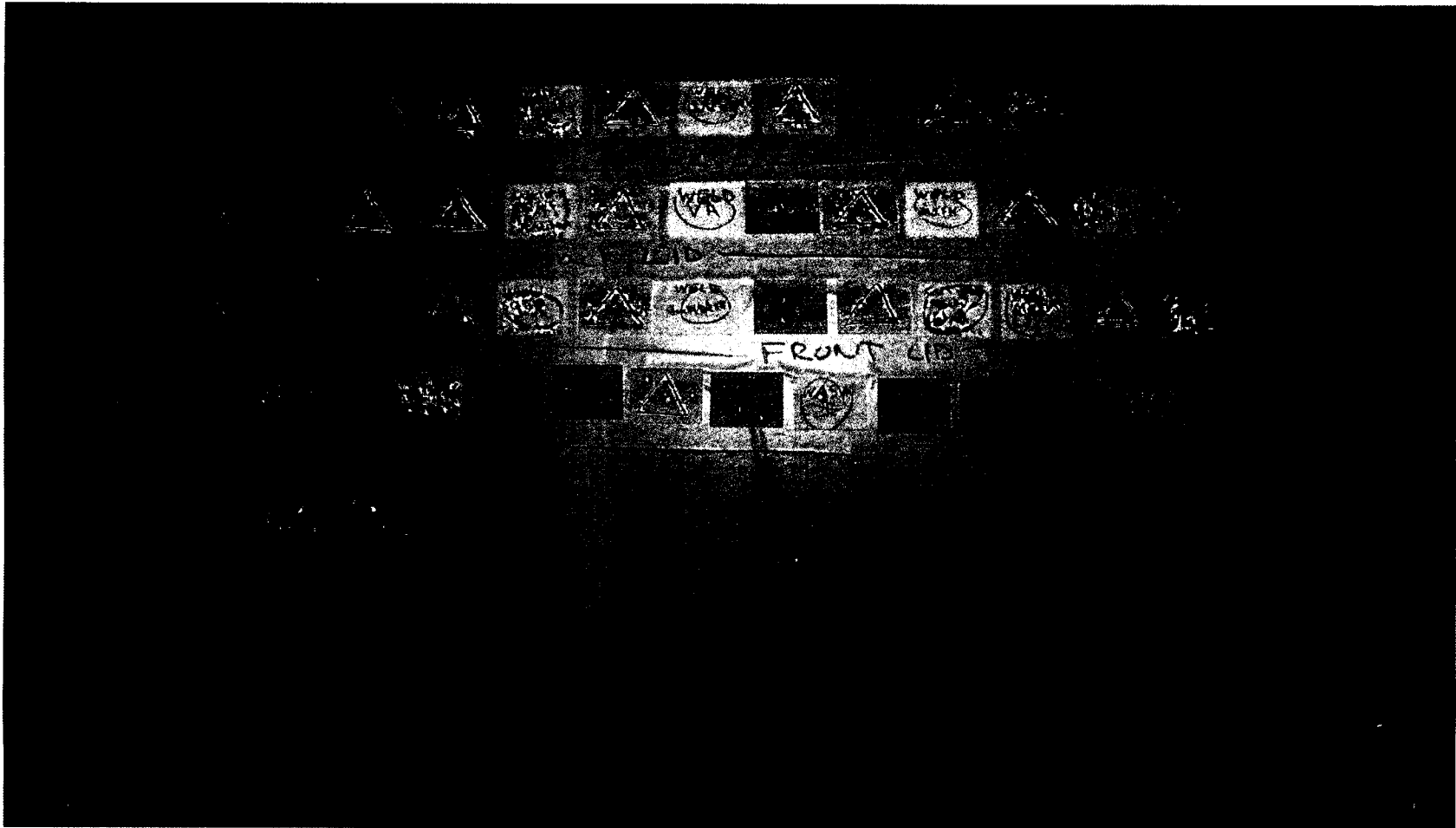
OK-RSS 06.11.12

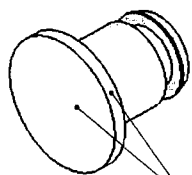
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RELEASED

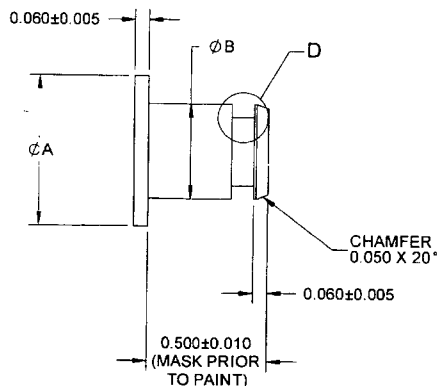
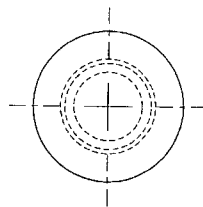
C	ADD -049/-051/-053, CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047; UPDATE DIM A FOR -045	PH	06.05.11
A	NEW ISSUE	PH	06.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED			
MFG APPR.			
APPROVED			
DE APPR.		DRAWING NO. D3492 REV. C SHEET 1 OF 2	
DATE	07.10.05	TITLE PLUG SCALE 2:1	
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Value stream mapping during Kaizen event.

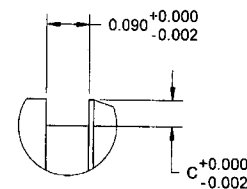




POWDER COAT THESE
FACES ONLY PER NOTE 2



D3492-XX PLUG



DETAIL D

w/o 57519

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-1	0.625	0.394	0.055	M6061T6R0.625
D3492-3	0.750	0.582	0.045	M6061T6R0.750
D3492-5	0.375	0.188	0.045	M6061T6R0.375
D3492-7	0.500	0.270	0.045	M6061T6R0.500
D3492-9	0.938	0.750	0.045	M6061T6R1.000
D3492-11	0.850	0.664	0.045	M6061T6R0.875
D3492-13	0.750	0.520	0.045	M6061T6R0.750

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

UNDER REVIEW

01.01.11 984
05A 00 ON D3492-3
REF. C.K. (HALL SHAW)
ASS 08.11.12
OKay

DEO ATTACHED

RELEASED

DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3492 TITLE PLUG SCALE 4:1 COPYRIGHT © 2007 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>
DRAWN		
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		REV. C SHEET 2 OF 2
DATE	07.10.05	



What is Waste

An activity or output that ***adds cost but does not add value*** as perceived by the end-use customer.

Elimination of waste - activities that utilize resources but do not create value must be eliminated. This is an ongoing hunt! Ideally it will involve all employees.

If you could explain to your customer what ***every step of*** your operation cost, are there any steps your customer would not be willing to pay for?

- scrap
- rework
- looking for: parts, tools, material, people, etc.
- rescheduling
- expedited shipments
- ?????????

DRAWING NO. D3492	TITLE PLUG	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D3492-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN AJS	CHECKED	MFG. APPR. <i>B</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>			
DATE 08.11.05	DATE 08.11.05	DATE 08.11.05	DATE 08/11/05	DATE 08/11/05			

SHEET 2 MODIFY -13 PLUG AS SHOWN:

IS:

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-13	0.750	0.510	0.045	M6061T6R0.750

w/057519

WAS:

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-13	0.750	0.520	0.045	M6061T6R0.750

RELEASED
08/11/10



The value adding parts of the process are obvious, so companies mistakenly focus on trying to make them go faster. The waste is not obvious, so it is not addressed. Lean focuses on eliminating the waste.

Lean is ongoing, there is no end to the search for waste!